

MAC PARA MUSE 5 31

**Type designation** MAC PARA Muse 5 31  
**Type test reference no** DHV GS-01-2637-21  
**Holder of certification** [MAC Para Technology](#)  
**Manufacturer** [MAC Para Technology](#)  
**Classification** A  
**Winch towing** Yes  
**Number of seats min / max** 1 / 1  
**Accelerator** Yes  
**Trimmers** No



**BEHAVIOUR AT MIN WEIGHT IN FLIGHT (105KG)**

**BEHAVIOUR AT MAX WEIGHT IN FLIGHT (125KG)**

**Test pilots**



**Harald Buntz**

No release



**Sebastian Mackrodt**

No release

**Inflation/take-off**

**Rising behaviour** Smooth, easy and constant rising  
**Special take off technique required** No

Smooth, easy and constant rising  
 No

**Landing**

**Special landing technique required** No

No

**Speeds in straight flight**

**Trim speed more than 30 km/h** Yes  
**Speed range using the controls larger than 10 km/h** Yes  
**Minimum speed** Less than 25 km/h

Yes  
 Yes  
 Less than 25 km/h

**Control movement**

**Symmetric control pressure** Increasing  
**Symmetric control travel** Greater than 65 cm

Increasing  
 Greater than 65 cm

**Pitch stability exiting accelerated flight**

**Dive forward angle on exit** Dive forward less than 30°  
**Collapse occurs** No

Dive forward less than 30°  
 No

**Pitch stability operating controls during accelerated flight**

**Collapse occurs** No

No

**Roll stability and damping**

**Oscillations** Reducing

Reducing

**Stability in gentle spirals**

**Tendency to return to straight flight** Spontaneous exit

Spontaneous exit

**en : Verhalten beim Verlassen einer vollständigen Steilspirale**

**en : Erstes Ansprechen des Gleitschirms (die ersten 180°)** en : unmittelbare Verringerung der Drehgeschwindigkeit  
**Tendency to return to straight flight** en : selbstständiges Ausleiten (G-Kraft abnehmend, Drehgeschwindigkeit abnehmend)  
**Turn angle to recover normal flight** Less than 720°, spontaneous recovery

en : unmittelbare Verringerung der Drehgeschwindigkeit  
 en : selbstständiges Ausleiten (G-Kraft abnehmend, Drehgeschwindigkeit abnehmend)  
 Less than 720°, spontaneous recovery

**Symmetric front collapse**

**Entry** Rocking back less than 45°  
**Recovery** Spontaneous in less than 3 s

Rocking back less than 45°  
 Spontaneous in less than 3 s

<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 0° to 30°
<b>Change of course</b>	Keeping course	Keeping course
<b>Cascade occurs</b>	No	No
<b>en : Faltleinen wurden benutzt</b>	no	no

**en : Symmetrischer Frontklapper mindestens 50% Flügeltiefe**

**A**

**A**

<b>Entry</b>	Rocking back less than 45°	Rocking back less than 45°
<b>Recovery</b>	Spontaneous in less than 3 s	Spontaneous in less than 3 s
<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 0° to 30°
<b>Change of course</b>	Entering a turn of less than 90°	Entering a turn of less than 90°
<b>Cascade occurs</b>	No	No
<b>en : Faltleinen wurden benutzt</b>	no	no

**en : Symmetrischer Frontklapper im beschleunigten Flug mindestens 50% Flügeltiefe**

**A**

**A**

<b>Entry</b>	Rocking back less than 45°	Rocking back less than 45°
<b>Recovery</b>	Spontaneous in less than 3 s	Spontaneous in less than 3 s
<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 0° to 30°
<b>Change of course</b>	Entering a turn of less than 90°	Entering a turn of less than 90°
<b>Cascade occurs</b>	No	No
<b>en : Faltleinen wurden benutzt</b>	no	no

**Exiting deep stall (parachutal stall)**

**A**

**A**

<b>Deep stall achieved</b>	Yes	Yes
<b>Recovery</b>	Spontaneous in less than 3 s	Spontaneous in less than 3 s
<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 0° to 30°
<b>Change of course</b>	Changing course less than 45°	Changing course less than 45°
<b>Cascade occurs</b>	No	No

**High angle of attack recovery**

**A**

**A**

<b>Recovery</b>	Spontaneous in less than 3 s	Spontaneous in less than 3 s
<b>Cascade occurs</b>	No	No

**Recovery from a developed full stall**

**A**

**A**

<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 0° to 30°
<b>Collapse</b>	No collapse	No collapse
<b>Cascade occurs (other than collapses)</b>	No	No
<b>Rocking back</b>	Less than 45°	Less than 45°
<b>Line tension</b>	Most lines tight	Most lines tight

**en : Kleiner einseitiger Klapper**

**A**

**A**

<b>Change of course until re-inflation</b>	Less than 90°	Less than 90°
<b>Maximum dive forward or roll angle</b>	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°
<b>Re-inflation behaviour</b>	Spontaneous re-inflation	Spontaneous re-inflation
<b>Total change of course</b>	Less than 360°	Less than 360°
<b>Collapse on the opposite side occurs</b>	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
<b>Twist occurs</b>	No	No
<b>Cascade occurs</b>	No	No
<b>en : Faltleinen wurden benutzt</b>	no	no

**en : Großer einseitiger Klapper**

**A**

**A**

<b>Change of course until re-inflation</b>	90° to 180°	Less than 90°
<b>Maximum dive forward or roll angle</b>	Dive or roll angle 0° to 15°	Dive or roll angle 15° to 45°
<b>Re-inflation behaviour</b>	Spontaneous re-inflation	Spontaneous re-inflation
<b>Total change of course</b>	Less than 360°	Less than 360°
<b>Collapse on the opposite side occurs</b>	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
<b>Twist occurs</b>	No	No
<b>Cascade occurs</b>	No	No
<b>en : Faltleinen wurden benutzt</b>	no	no

**en : Kleiner einseitiger Klapper im beschleunigten Flug**

**A**

**A**

<b>Change of course until re-inflation</b>	Less than 90°	Less than 90°
<b>Maximum dive forward or roll angle</b>	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°

<b>Re-inflation behaviour</b> Spontaneous re-inflation		Spontaneous re-inflation
<b>Total change of course</b> Less than 360°		Less than 360°
<b>Collapse on the opposite side occurs</b> en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)		en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
<b>Twist occurs</b> No		No
<b>Cascade occurs</b> No		No
<b>en : Faltleinen wurden benutzt</b> no		no
<b>en : Großer einseitiger Klapper im beschleunigten Flug</b>	<b>A</b>	<b>A</b>
<b>Change of course until re-inflation</b> 90° to 180°		Less than 90°
<b>Maximum dive forward or roll angle</b> Dive or roll angle 0° to 15°		Dive or roll angle 15° to 45°
<b>Re-inflation behaviour</b> Spontaneous re-inflation		Spontaneous re-inflation
<b>Total change of course</b> Less than 360°		Less than 360°
<b>Collapse on the opposite side occurs</b> en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)		en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
<b>Twist occurs</b> No		No
<b>Cascade occurs</b> No		No
<b>en : Faltleinen wurden benutzt</b> no		no
<b>Directional control with a maintained asymmetric collapse</b>	<b>A</b>	<b>A</b>
<b>Able to keep course</b> Yes		Yes
<b>180° turn away from the collapsed side possible in 10 s</b> Yes		Yes
<b>Amount of control range between turn and stall or spin</b> More than 50 % of the symmetric control travel		More than 50 % of the symmetric control travel
<b>Trim speed spin tendency</b>	<b>A</b>	<b>A</b>
<b>Spin occurs</b> No		No
<b>Low speed spin tendency</b>	<b>A</b>	<b>A</b>
<b>Spin occurs</b> No		No
<b>Recovery from a developed spin</b>	<b>A</b>	<b>A</b>
<b>Spin rotation angle after release</b> Stops spinning in less than 90°		Stops spinning in less than 90°
<b>Cascade occurs</b> No		No
<b>B-line stall</b>	<b>A</b>	<b>A</b>
<b>Change of course before release</b> Changing course less than 45°		Changing course less than 45°
<b>Behaviour before release</b> Remains stable with straight span		Remains stable with straight span
<b>Recovery</b> Spontaneous in less than 3 s		Spontaneous in less than 3 s
<b>Dive forward angle on exit</b> Dive forward 0° to 30°		Dive forward 0° to 30°
<b>Cascade occurs</b> No		No
<b>Big ears</b>	<b>A</b>	<b>A</b>
<b>Entry procedure</b> Dedicated controls		Dedicated controls
<b>Behaviour during big ears</b> Stable flight		Stable flight
<b>Recovery</b> Spontaneous in less than 3 s		Spontaneous in less than 3 s
<b>Dive forward angle on exit</b> Dive forward 0° to 30°		Dive forward 0° to 30°
<b>Big ears in accelerated flight</b>	<b>A</b>	<b>A</b>
<b>Entry procedure</b> Dedicated controls		Dedicated controls
<b>Behaviour during big ears</b> Stable flight		Stable flight
<b>Recovery</b> Spontaneous in less than 3 s		Spontaneous in less than 3 s
<b>Dive forward angle on exit</b> Dive forward 0° to 30°		Dive forward 0° to 30°
<b>Behaviour immediately after releasing the accelerator while maintaining big ears</b> Stable flight		Stable flight
<b>Alternative means of directional control</b>	<b>A</b>	<b>A</b>
<b>180° turn achievable in 20 s</b> Yes		Yes
<b>Stall or spin occurs</b> No		No
<b>Any other flight procedure and/or configuration described in the user's manual</b>		
No other flight procedure or configuration described in the user's manual		